

Preliminary Amendment
Application No. 10/526,610

Atty. Docket No. 268251US-6

IN THE CLAIMS

This listing of the claims will replace all prior versions and listings of the claims
in the Application.

Claim 1 (Original): Gyroloaser to measure the angular speed or the relative
angular position according to a set rotation axis, comprising at least:

a solid-state amplifying medium;

a slaving device including at least a first optical assembly made up of a first linear
polarizer, a first nonreciprocal optical rotator and an optical element, said optical element
being either a reciprocal optical rotator or a birefringent element, with at least one of the
effects of the birefringence being adjustable;

a measuring instrument;

a ring-shaped optical cavity comprising a second optical assembly made up
successively of a first quarter waveplate, a second nonreciprocal optical rotator and a
second quarter waveplate, whose main axes and perpendicular to those of the first quarter
waveplate;

such that a first linearly polarized propagation mode can propagate in a first
direction in the cavity, and a second propagation mode polarized linearly parallel to the
first can propagate in the opposite direction in the cavity, with the main axes of the first
quarter waveplate and the second quarter waveplate tilted 45 degree relative to the linear

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polarization directions of the propagation modes, the optical frequencies of the two modes being different.

Claim 2 (Original): Gyrolaser according to claim 1, wherein the cavity comprises a second linear polarizer whose axis is parallel to that of the first linear polarizer and positioned such that the optical assembly consisting of the first nonreciprocal optical rotator and the optical element are placed between the first and the second polarizer.

Claim 3 (Original): Gyrolaser to measure the angular speed according to a set rotation axis, comprising at least:

a solid-state amplifying medium;

a measuring instrument;

a ring-shaped optical cavity comprising:

a slaving device comprising at least a first optical assembly made up of a first linear polarizer and an adjustable nonreciprocal optical rotator;

a second optical assembly made up successively of a first quarter waveplate, a second nonreciprocal optical rotator and a second quarter waveplate, the axis of the first waveplate being tilted by an angle other than 45 degrees relative to the polarization direction of the linear polarizer, and the axis of the second waveplate being

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tilted approximately 45 degrees relative to the polarization direction of the linear polarizer;

such that a first propagation mode can propagate in a first direction in the cavity, and a second propagation mode can propagate in the opposite direction in the cavity, the optical frequencies of both modes being different.

Claim 4 (Currently Amended): System to measure the angular speeds or relative angular positions along three different axes, comprising three gyrolasers according to ~~one of the above claims~~ claim 1, oriented in different directions and mounted on a common mechanical structure.

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Claim 5 (New): System to measure the angular speeds or relative angular positions along three different axes, comprising three gyrolasers according to ~~one of the above claims~~ claim 2, oriented in different directions and mounted on a common mechanical structure.

Claim 6 (New): System to measure the angular speeds or relative angular positions along three different axes, comprising three gyrolasers according to ~~one of the above claims~~ claim 3, oriented in different directions and mounted on a common mechanical structure.